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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 074273/0181

Applicant: Takahiro KUMURA

Title: SPECTRUM SPREAD COMMUNICATION SYNCHRONIZATION
ESTABLISHING APPARATUS USING FREQUENCY OFFSET
AND RECEIVER WITH THE SAME

Serial No.: 09/779,566

Filed: February 9, 2001

Examiner: Unassigned

Art Unit: 2631

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56 and 37 CFR §1.97**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Submitted herewith on Form PTO SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR 1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR 1.97 and 1.98.

The submission of any documents herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The instant Information Disclosure Statement is believed to be filed in accordance with 37 C.F.R. 1.97(b), prior to the mailing date of a first Office Action on the merits (first scenario). If that is not the case, such as in a second scenario in which a first Office Action on the merits has been mailed before the filing of the instant Information Disclosure Statement, then either a certification or fee is required, and a certification is provided below. If neither of the first or second scenarios is the case, such as if a final Office Action or a notice of allowance has been mailed by the PTO (third scenario), then both a certification and fee are required, and in that case a certification is provided below and also the PTO is authorized to obtain the necessary fee to have the instant IDS considered, from Foley & Lardner Deposit Account #19-0741.

CERTIFICATION

The undersigned hereby certifies in accordance with 37 C.F.R. §1.97(e)(1) that items of information A2 and A3 listed on the Form PTO SB/08 submitted with this Information Disclosure Statement were first cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this Statement. Item of information A1 is a U.S. patent that is a counterpart to item of information A2.

RELEVANCE OF EACH DOCUMENT

A translation of a portion of a Chinese Office Action that issued September 26, 2003 with respect to a counterpart Chinese patent application is provided below.

"1. Claim 1 relates to a synchronization establishing apparatus in a spectrum spread communication system. D1 (CN1164151A), which discloses a synchronizer for a receiver of a spread spectrum communication apparatus, belongs to the same technical field as the present application. Specifically, D1(see page 4, line 5—page 7, line 4 and Figs. 1-10) discloses the following technical features. The synchronizer comprises a search PN signal generator 201, a search correlation unit 202, a data buffer 205, a path search unit 200, a PN signal generator 203 and a DLL (Delay Lock Loop) switch 204. The search correlation unit

202 receives the sampling data from a search unit and correlates the sampling data with the PN signal outputted from the search PN signal generator 201. The resultant correlated data is stored in the data buffer 205, and a maximum power path is obtained. The path search unit 200 searches the correlation data on the maximum power path from the data buffer and outputs the PN phase of the path. (As can be seen, the above-mentioned components in D1 correspond to the "search section" in the present application). Then, the PN signal generator outputs a PN signal with the PN phase received from the path search unit 200 to the DLL and a data demodulation correlation device 105. The data demodulation correlation device 105 is used for demodulation according to the PN value of the maximum power path, and thus corresponds to the "demodulation path selecting section" in the present application. Claim I differs from D1 in that D1 does not mention the "frequency offset estimating section", which estimates the frequency offsets from the correlation values, the power values and the demodulation timing data to output the estimated frequency offsets to the search section so as to compensate for the frequency offsets in the received signals.

D2 (CN1175171A), which discloses a method and an apparatus for recovering and compensating for carrier waves in a spectrum spread communication system, belongs to the same technical field as the present application. Specifically, D2 (see page 2, line 10—page 3, line 36; page 6, line 12—page 7, line 11; and Figs. 1-4)) discloses the following technical features. The system comprises a carrier wave estimation device 6 including first and second multipliers 33 and 32, a carrier wave offset estimation device 38 and a carrier frequency modulator 36. The multipliers 33 and 32 are used for calculating correlation values from a received spectrum spread signal, and thus is equivalent to a signal search section. The carrier wave offset estimation device 38 is used for estimating the frequency offsets using the correlation values. The carrier frequency modulator 36 modulates the frequency according to the correlation values to output to the first multiplier 33 so as to compensate for the frequency offsets in the received signals. As can be seen, the carrier wave offset estimation device corresponds to the "frequency offset estimating section" in the present application. Further, it solves the same technical problem in the spectrum spread receiver and achieves the same technical effect as the "frequency offset estimating section" in the present application. Thus, those skilled in the art can obtain the technical solution of claim I on the basis of D1 in combination with D2 without making any inventive efforts. Therefore, claim 1 lacks inventiveness under Article 22, Paragraph 3 of the Chinese Patent Law.

2. Claims 2 and 4, which refer to claim 1, further define that the makeup of the search section as follows: the search section comprises a synchronizing circuit and a path, or comprises a synchronizing circuit, a slot integrating unit and a path search section. However, these are common means in the art. Therefore, when claim 1 lacks inventiveness, claims 2 and 4 do not possess inventiveness either.

Claims 3 and 5, which refer to claims 2 and 4, further define the synchronization circuit. However, the signal converting section, the sampling and holding circuit, the correlation unit and the symbol integrating unit, which constitute the synchronization circuit, are all common means in the art. Therefore, when claims 2 and 4 lack inventiveness, claims 3 and 5 do not possess inventiveness either.

The additional technical features of claim 6 are as follows: said synchronization establishing apparatus includes a plurality of said search sections, and said frequency offset estimating section estimates said frequency offsets for each of said plurality of search sections. These features, however, are common means in the art. Therefore, when claims 1-5 lack inventiveness, claim 6 which refers to it does not possess inventiveness either.

3. Claim 7, which relates to a method of establishing synchronization in a spectrum spread communication system, comprises steps corresponding to the operating principles of the apparatus in claim 1. According to the above comments, claim 7 lacks inventiveness over D1 and D2 under Article 22, Paragraph 3 of the Chinese Patent Law.

The additional technical features of claims 8 and 9, which relate to the specific steps of the estimating, are common means in the art. Therefore, when claim 7 lacks inventiveness, claims 8 and 9 which relate to it do not possess inventiveness either.

For the reasons mentioned above, none of the claims of the present application comply with Article 22, Paragraph 3 of the Chinese Patent Law. Moreover, no other substantively patentable contents are found in the Description. Therefore, the application has no possibility of being patented. The application will be rejected if the applicant fails to give persuasive arguments within the specified four-month time limit."

Applicant's statements regarding the Chinese Office Action are based on a partial translation that Applicant's representative obtained. These statements should in no way be considered as an agreement by Applicant with, or an admission of, what is asserted in the Chinese Office Action.

Applicant respectfully requests that the listed documents be considered by the Examiner and formally be made of record in the present application and that an initialed copy of Form PTO SB/08 be returned in accordance with MPEP §609.

Respectfully submitted,

December 15, 2003
Date

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